

THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

December 2002



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The Naval Safety Center's Aviation Magazine

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On the Cover

Volume 47 No. 12

An FA-18 from VFA-195 "Dambusters" launches from the flight deck of U.S.S. *Kitty Hawk*, in support of Operation Enduring Freedom.
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Mission Statement

Mishaps waste our time and resources. They take our Sailors, Marines and civilian employees away from their units and workplaces and put them in hospitals, wheelchairs and coffins. Mishaps ruin equipment and weapons. They diminish our readiness.

This magazine's goal is to help make sure that personnel can devote their time and energy to the mission, and that any losses are due to enemy action, not to our own errors, shortcuts or failure to manage risk.

We believe there is only one way to do any task: the way that follows the rules and takes precautions against hazards. Combat is hazardous enough; the time to learn to do a job right is before combat starts.

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December Thanks

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Hydraulic Hell

By Lt. Shane Marchesi

My first night-combat mission began with reveille and ended with a NATOPS wake-up call. The brief was pointed. We discussed the administrative transit to and from Kandahar, as well as the tactical considerations of working in a killbox in southern Afghanistan.

Next, we packed for the upcoming battle: holster, gun, ammunition, evasion chart, night-vision goggles, camel back, memory unit, power bars, and kneeboard pack. After spending three years carrying only an approach plate and kneeboard, the amount of gear required definitely changed our perspective on the upcoming evolution. By the time I arrived at the jet, I was ready to call it a night.

The initial portion of the mission went as briefed. I found my lead during the transit, and we went to our first tanker. From a distance, my goggles broke out several point sources of light, which I correlated to my tanker's position lights. The correlation proved incorrect. I couldn't understand how the tanker was transparent in places. I saw why when I got a little closer. There were two Hornets on each wing and a Prowler in the basket.

Besides confusion about the tanker itself, I had spurious flight-control-system (FCS) cautions, with no Xs during the join. My bucket was full flying wing, so I didn't troubleshoot further. I accepted the cautions as an anomaly and continued our mission, working with an AC-130 pounding Taliban SUVs.

The FCS caution returned 20 minutes after our first tanking evolution. I checked the FCS page and saw my left leading-edge flap was X'd out. The next step was

to break out the pocket checklist. My hydraulic gauge read normal, and I reset the flight controls. They reset properly, so I continued to monitor the hydraulic 1 and 2 gauges.

Within seconds, my hyd 1 needle dropped to 2,800 psi—close to within limits—and I knew something was wrong. I told my lead, and we headed southeast. Thirty seconds later, my hyd 1 gauge read 2,500 psi, and, 30 seconds later, it dropped to 2,000 psi. We knew there was a hydraulic problem. Finally, the hyd 1 pressure dropped completely.

After a moment of confusion in my cockpit, lead and I began to troubleshoot the

hydraulic problems. Our main concern was an APU ACCUM caution light that came on during the hyd 1 failure. The caution indicated a potential leak in the remaining good hydraulic system. Leaks in both systems could result in out-of-control flight. Of note, the aircraft-discrepancy book contained a previous gripe for the APU ACCUM caution. While we were troubleshooting, we did not discuss the gripe information.

Over Afgh

As the flight progressed, other issues had to be addressed. My aircraft was configured with two GBU16s and three external fuel tanks. As I decelerated through 200 knots, I tried to maintain altitude with the right throttle at military power and the left throttle at idle, and later off. Consequently, I decided to jettison the two GBUs. After jettison, I maintained 20,000 feet and 220 knots.

When this incident occurred, our flight was 50 miles north of Kandahar, in the heart of southern Afghanistan. There were two options: Return to the ship, which was 600 miles away, or divert into Jacobabad, Pakistan. Both options had drawbacks. We were below single-engine bingo for the ship. Although the aircraft was capable of tanking, getting a heavy tanker down to 15,000 feet and slowing to 220 knots over Afghanistan was not a possibility. Also, we were unsure of hyd 2's

status, specifically hyd 2B. The APU ACCUM caution, while a repeat gripe, caused us to doubt the reliability of hyd 2B.

Landing in Jacobabad, Pakistan brought other considerations. At the time of the incident, we considered the area around the airfield a hostile environment. Reports of daily surface-to-air fire came from near the field. Eventually, because of the nature of the emergency, we decided a trip to Jacobabad was in order even though it was 400 miles away.


The transit took over an hour, with all cautions remaining, flight controls X'd out, and a shaky hyd 2 needle. My lead accompanied me until he was instructed to return to mother. I had little trouble finding the field. Special Forces on station controlled the field and awaited my arrival.

I restarted the left engine for landing and flew a seven-degree AOA approach, flaring because of LEF position. Also, the right rudder was X'd out, fared out 47 degrees, and the right motor was above 85 percent. The anti-skid worked as advertised, despite a lack of use the previous month. I taxied off the runway, shut down, and remained in Jacobabad for the three days.

We learned several lessons from my experience over Afghanistan:

- ➔ Weekly NATOPS exams keep each pilot sharp, but periodic review of all procedures also is helpful.
- ➔ Upon entry into Jacobabad's airspace, I initially couldn't contact the tower because the frequency was incorrect on our card. An airwing E-2 relayed the right frequency to us so I could contact the tower before landing. All the other information was correct, making it easy to find the field. Always make sure your divert information is accurate.

- ➔ Jettison bombs, tanks, or do whatever is necessary to stay airborne. I feared an out-of-control-flight situation because of degraded flight controls and limited airspeed more than I feared landing in Jacobabad.
- ➔ The lower altitudes put my aircraft in the envelope of surface-to-air missiles. Altitude and airspeed are life, especially in a hostile environment.

The implications for serious aircraft failures in a hostile environment can't be ignored for squadrons forward-deployed and flying in harm's way. Know the divert information, fly the aircraft first, and trust NATOPS for troubleshooting. 

Lt. Marchesi flies with VFA-82.

manistan

No Gyro, No Horizon,

By Lt. Dave Burmeister

I was a nugget on my first deployment. We had been in the Arabian Gulf for the past three months, doing the same missions day in and day out, in support of Operation Southern Watch. The sky was clear but very hazy. The summer had ended, so the weather wasn't too hot. We flew Case I procedures during the day, but there was not a well-defined horizon.

I felt good about myself: I had 40 traps under my belt, and I had flown every day for the past four months. Even though I had been with the squadron just six months, I was becoming "one" with the mighty E-2C.



No Problem

Our mission for this day was similar to most of the missions we had been flying: Take off before everyone else, check the fighter package through the local control agency, and go to our station. It was so standard it seemed as if we barely had to brief. One thing we do in the E-2C community is brief crew coordination for every flight. This brief would be a lifesaver on this hop.

We manned the aircraft, started engines, and began our taxi to the catapult with no problems. The weapons systems were up and running, and the cockpit looked good. We went into tension, got the two-finger turn up, and began our trip down cat 3. We were airborne with no problems.

As I started my clearing turn to the left, I noticed my gyro did not respond. I didn't think too much of this problem, because it's common in the Hawkeye. We have two systems that provide pitch and roll to our gyros: the carrier-inertial-navigation system (CAINS), and the heading-and attitude-reference system (HARS).

I had the CAINS selected for this cat shot. Normally, the pilot will have CAINS or HARS selected, and the copilot will select the other. The CAINS has a tendency to dump on the cat shot, so I switched my control to the HARS system and went on my way, outbound at 500 feet over the water.

As we continued outbound, I told my copilot the gyro had failed. My copilot was the carrier-airborne-early-warning plane commander (CAPC) for this hop. He asked if I had switched to HARS since his system was working perfectly, and I told him I had.

We thought everything was fine. At seven miles, I told the crew I would turn out to the right. Everyone was ready. I turned sharply and looked down at my gyro; it showed me wings level. Although it caught me by complete surprise, I had enough sense to look outside—I saw nothing but haze.

I still was in a 60-degree, angle-of-bank turn, and I had no idea how much time had gone by, or

what the aircraft attitude or altitude was. I began to fixate on my broken gyro, when my copilot started screaming, "Climb! Climb!"


After we had traveled through 200 feet, while descending more than 1,200 feet per minute, he grabbed the controls, pulled up, and we started to climb. When I had calmed down and realized we were fine, he gave the controls back to me, and we finished the mission. I flew back to the carrier, did a straight-in approach, and caught the 2-wire.

Fortunately, the CAPC had the presence of mind to understand the severity of the situation

I began to fixate on my broken gyro, when my copilot started screaming, "Climb! Climb!"

I had gotten us into. I had vertigo, and my brain had shut down. Instead of pulling up while turning, I had decided to make a hard-level break and then climb. Now, every time I turn out during a Case I launch, I make sure I have some altitude between the water and myself—right away.

In the E-2C community, we have the luxury of two pilots in the cockpit. One of those pilots usually has at least 600 to 700 hours in model and at least one cruise under his belt.

I quickly realized that at 500 feet outbound on a Case I departure, you don't try something new or fancy, with only 100 hours in the plane. Because our brief included crew coordination, vertigo, and changing controls when the other pilot is flying out of parameters, we were able to save ourselves and a multi-million-dollar aircraft. Whether you are in a single seat or multi-place aircraft, vertigo and confusion can hit at any time. Most likely, it will happen when everything seems normal. 

Lt. Burmeister flies with VAW-113.

LOW-FUEL

By Lt. Matt W. Knowles

Fuel management in the H-46, with its short legs, is an important skill to master. This fact came to light on a cargo move.

HC-11 Det 2, assigned to USS *Nimitz*, not only stood out as different, but more like a facial mole in the CVN CAG. I say that to emphasize two views: A mole can be a beautiful thing or an eyesore—depending on how it is presented.

Our mission was to provide logistics support and inner defense for USS *Nimitz* as it transited around South America. This was a scheduled homeport change from Norfolk to San Diego after three years in the yards. It is important to mention the time in the yards because many of the ship's crew never had been to sea. Furthermore, we were embarked with CVWR-20, reservists based in NAS Atlanta.

Two weeks into the trip, our first stop was scheduled to be Rio de Janeiro. Because of security concerns following Sep. 11, 2001, however, the liberty portion of the port call was cancelled. In comes the "Deuce" of HC-11 for logistics runs to the beach. Putting aside the growing pains of an HC det and deployment aboard a CVN with a reserve wing, the pilots and aircrewmen of the det were excited about their first real mission. It's what we do, and we do it very well.

The past two weeks had been filled with acronyms like ULT, SUW and SSC, many of which we had to look up after every air-ops meeting. The task was to fly into Galeao Antonio Carlos Jobim Airport. We would land at the military side of the airport, where a beach det staged the various cargo loads to be delivered to the ship. Two aircraft were to fly in, pick up five pallets each, and return to the ship for shutdown and offload.

Let me spell out the ship's idea of how this would be conducted. First, the ship would "plan" to be no more than 60 miles away, operating with the Brazilian Navy. This plan included touch-and-goes by Brazilian Navy A-4s, SH-3s, and a Super Lynx operating from Brazilian ships. Second, we would not take on fuel at the beach. We were concerned about security and the quality of fuel we might be taking on, not to mention returning to the ship with JP-8. Third, we were to remain engaged to avoid the risk of shutting down. If we couldn't restart, we would be unable to return to the ship (darn!). Fourth, the ship would be sending in the COD with an inspection-security working-party team to help support the onload and to provide a security perimeter.

We briefed the event as a formation flight, manned Sideflare 60 and Sideflare 63, and planned for a 1515 launch, with a 1645 recovery. I would be with the det OinC in SF 60; SF 63 had an experienced HAC and an H2P who was on his last work-up and H2P cruise before his HAC board. Both crews had plenty of H-46 experience.

We were flying our second mission of the day. Everything had gone OK during the same run earlier that morning. The ORM factor was medium. Weather was CAVU and not an issue. By 1630, both aircraft were ops normal, airborne, calling 2+00 hours to splash. The ship had launched us 60 miles away and over an hour later than planned.

The flight to the beach earlier that day had introduced us to the unique Brazilian-Portuguese language when talking with the controllers. To say they were hard to understand would be a gross understatement.

After flying 40 minutes, the OinC and I landed and found the military ramp. I remained with the aircraft while the OinC went into base ops to file the return VFR flight plan. Just as he left the aircraft, I noticed

PLUCKER

the COD departing with the inspection-security working party assigned to help load the helo. Problem one: Now the aircrewmembers were left with two Brazilians and one forklift driver to load five pallets per aircraft. This evolution would be very time-consuming.

After we were loaded, I called clearance delivery for our VFR flight to the ship—getting the clearance took another 15 minutes. Sitting on deck and spinning this whole time, we discussed the fuel state of Dash 2 (SF 63). They had expressed a concern for fuel. We had about 30 minutes of fuel left, just enough to fly the 60 miles to the ship. Earlier that day, the ship had assured us they would be inside that 60-miles range—right!

Finally, we were off the deck. The sun was resting just over the Brazilian mountains, and Rio looked great at dusk. Nagging at the back of my mind, however, was this fuel issue. Dash 2 had left with slightly less gas than we had, but we pressed on. After clearing the beach line at 15 miles, the fuel situation looked serious. We finally received a TACAN lock; DME read 57 miles away—the ship had been more than 70 miles away when we left the airport.

The OinC immediately called the ship and requested they close—we were at a low-fuel state. I glanced at the fuel-quantity indicator. I swear it said 425 pounds per side, 25 minutes of fuel. I was about to open my mouth when the OinC, in a low voice, said, “We’re not going to make it.” I took that statement to heart, made the best standard-rate turn I ever have made, and headed back to the beach.


That sinking feeling still was there, but I felt much better. Although there had been plenty of chatter earlier in the day—from Dash 2 on our common frequency—the circuit now was quiet. They were sticking close to us in perfect form position. Once again, we were in the realm of the Brazilian controllers. We managed to make



it back to the airbase, but low-fuel lights now were on steady. After a normal shutdown, we all breathed a sigh of relief.

We waited for the fuel truck and used an English-to-Spanish-to-Portuguese translation to work out the payment. With full bags of gas and the whole ship and airwing aware of our short legs, we returned to mother about 16 hours after the first brief for the day. Fortunately, earlier that day, we all had been afforded an opportunity to re-rack while the Brazilians were bouncing on our deck.

Many factors played into our long day and low-fuel-state landing. The ship tried to work with the Brazilians and had managed to get out of our “arranged” return leg. The logistical problems of getting us loaded on the beach had been compounded by the untimely loss of the working party, which extended our time on deck. Even after five straight days of flying in and out of Rio, we never did get a better turnaround time on the VFR clearance. We learned to call well in advance while we were on APU power.

The most important factor was getting fuel on the beach. No one would have lost any sleep if we had taken on fuel. Better yet, they would have preferred we shut down, loaded the cargo, taken on fuel, and left. This scenario was the norm the rest of our time in Rio, as well as in all the other South American ports. I don’t think there was a barrier or lack of communication; rather, we allowed the ship and CAG to come into our cockpit and manage the fuel for us. 

Lt. Knowles flies with HC-11.

LOWFLARE

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Lt. Knowles flies with HC-11.

By Cdr. Bill Dooris

"304, Your Signal Divert..."

"304, your signal divert."

"Hornet rep. I can't. I don't even have the fuel to bingo."

"Say state."

"1.7K useable."

(Insert sounds of CATCC exploding in chaos.)

How did I get into this box during a Case III night CQ? With a tank 4 fuel-transfer failure and a bolter. CQ means a relatively steady deck, a divert available (120 miles), and no tanker required (so none readily available).

This was our last sea period before deployment. We were all very proficient, having just completed the air-wing Fallon detachment and having received our last nugget two months earlier. JTFEX would be our last wicket before we finally could get on with our job.

But first, we would travel to the waters off Alaska for a joint exercise. Eighteen hours of daylight should outweigh the pitching decks we might experience. The initial plan was just to day CQ, since we would fall out of night currency in Alaska anyway. But, plans change, and we found ourselves behind the ship at night, with the deck moving plus- or minus-14 feet.

My CQ requirement was two traps. When I manned up, I noticed the left drop tank was only half full. Many

cockpit switches also were set incorrectly, and the parking brake was off. I wondered what else I wasn't noticing. Since the purple-shirts on deck seemed to be ignoring the flight-deck chief's calls for fuel, I decided to transfer the drop-tank fuel into the jet. Add in a software-configuration caution that required an engine shutdown and a new digital-map load, and my good-deal day launch, pinky recovery, turned into a dark cat shot.

"304 airborne."

I turned downwind and reported, "Ready to come aboard."

Let's start the list: Radar is inop, the TACAN will not show up on the HIS, and the fuel won't dump. As I stationed overhead at 6,000 feet and troubleshoot all the problems, I told my CATCC rep my delay would be due to the failing fuel dumps.

"Copy 304. Just confirm you have normal fuel transfer."

Of course I have normal transfer. Why would he ask that?

"Affirm rep, good transfer."

I actually could dump fuel at very high rpm, greater than 90 percent. Then the FUEL XFER and GLIM 7.5 G cautions illuminated, which drew my attention to the fuel page. It showed tank 4 full and tank 1 only one-third full, with 900 pounds.

This situation is strange for the Hornet. The jet has four internal fuel tanks (tank 1 being the most forward), and the signal-data converter (SDC) controls the tank 1 fuel transfer. To prevent the center of gravity from moving too far aft, the SDC allows tank 1 to transfer only after tank 4 has started to transfer into the feed tanks. If the farthest aft fuel cell (tank 4) fails to transfer anything, the SDC will stop the transfer of the farthest forward cell until the low-fuel light comes on.

What does that all mean? I had 3,600 pounds of unusable fuel. After dumping to my max trap of 5,900 pounds and a long vector, I called the ball with 5,500 pounds—certainly a very comfortable fuel state. It allowed for at least two additional looks at the deck before I reached bingo.

As I was calling the ball, the thought emerged that I actually didn't have 5,500 pounds to use for a divert. My bingo fuel was 2,800 pounds, which we bumped up at night to 3,600 pounds.

"Bolter. Bolter."

"Rep, 304 airborne. Can you look at my CG again?"

"304 rep. Your signal divert."
(pause) "Hornet rep. I can't. I don't even have the fuel to bingo."

"Say state."

"1.7k useable."

All of a sudden, I was in a box, with only one way out: Land next pass or barricade.

I landed with 1,200 pounds usable.

What did I learn? Inform everyone as soon as you

can of your usable fuel. Include this info on the ball call. NATOPS states that, with a tank 4 transfer failure, gravity transfer alone will be insufficient to transfer all the fuel, leaving as much as 2,500 pounds unusable.

The FA-18C charts show that, for a Lot XIV, it is impossible to go aft of the CG limit, regardless of the fuel-tank states.

When I really must get aboard in the future, I won't use auto-throttles.

Cdr. Dooris Flies with VFA-113.

The Rest of the Story

By ADCS Paul Woodworth

Reset to earlier that same day.

It was just like any other half-day at sea. Like they say, it just doesn't get any better than a crisp NORPAC day. Aircraft 304 had launched for a second round of CQ. The weather was great Case III—40 degrees and 30 knots over the bow.

The jet was up and had a great first pass, trapped, and went right to the catapult. In tension, the final check was normal. The conditions were windy, and the flight deck was so loud you couldn't hear yourself think. Aircraft 304 climbed out but got a fuel transfer and boost-low caution. He trapped and was sidelined with troubleshooters coming to the rescue. They found every MSP code available that indicated an SDC failure. The SDC was changed, the aircraft low-power turned. Fuel transfer checked good, and 304 was back on the flight schedule.

Prepare to darken ship. The weather was getting better—10 degrees colder and threatening rain. The XO manned up 304 and headed for the catapult. After a good final check, he headed into the darkness toward marshal. We waited in the cold and rain for the first of his two passes. We got the call but not the one we wanted.

The boss let us know there was a Hornet with fuel problems on a straight-in. We all said, "No, it couldn't be 304. It was fixed." But, it was 304, with a more serious fuel problem. The aircraft's largest tank, tank 4, was not transferring its fuel. We were quite tense on deck because 304 was low state and couldn't make the divert field. There was talk of a barricade landing, but the talk passed when the XO trapped. Wow, that was close. The

aircraft was down and marked for hold fuel.

Now the hard part: What tank was the problem? Was tank 1 transferring too fast, or was tank 4 too slow? With no pertinent MSP codes present, it was off to the sea of reports. After the ECAMS reports were printed, the ADs went over every page but found nothing, so they dove into the MIMs. After a few hours with no results, they went back to the reports, trying to find something—anything—they had missed. They found it. An MSP code had set for only 1.5 seconds, enough time to get the ADs pointed in the right direction.

The MSP code was for a right-boost low. The jet was de-fueled and certified gas-free.

They went into tank 4 and its sea of tubing, looking for the motive flow-turbine-boost pump. Two hours and a few hundred feet of tubing later, they had removed the pump. Sure enough, the pump impeller was locked tight. While cleaning the residual fuel from the pump, the impeller was moved a bit, and hello, a thin 6-mm-by-1-mm piece of metal fell out of the turbine inlet. This piece was so small that most of us would have said, "That's not FOD; it's too small."

That small piece of metal, worth about as much as the cash value of a commissary coupon, almost brought down a 40-million-dollar aircraft. The pump was changed, and the aircraft returned to service with no other discrepancies.

When you are out there on the job, or better yet, on a FOD walkdown, remember: The little things count. And those little things can hurt in a big way. Good housekeeping and FOD awareness are the keys to greatness.

Keep them FOD-free and flying.

ADCS Woodworth is with VFA-113.

Photo by PH3 Tyler Clements

Broken Nosegear in the Prow

Photo by PI2 Graiso
Modified

By Maj. Clyde Beattie, USAF

A good deal occasionally drops into your lap. Our squadron was to be the recipient of a live shoot of a high-speed anti-radiation missile (HARM). As much as I loved Whidbey Island, Wash., after moving there from Cannon Air Force Base, N.M., seeing California sunshine—instead of continuous spring rains—and shooting a live HARM was a good deal worth fighting over.

After some good-natured discussions, my crew won the shoot. Reek, Shimon, Ratbert, and I packed our gear in the ol' family Griswold and headed south. The evening entertainment in Los Angeles was great.

It was a beautiful day with great flight conditions, and we were all pumped about the shoot. Our NATOPS

brief, which included many “what ifs,” focused mainly on HARM-launch contingencies. After the brief, we walked to our mighty steed.

After a normal start and taxi, we had a generator malfunction that threatened to give our wingman the launch. [*Wingman fangs grow 10 inches and start to drip saliva at this point.—Ed.*] Our wingman launched with the spare, and we prayed for a miracle. Fortunately, our maintainers scrambled to fix us and, after 30 minutes, gave us an “up” jet.

We blasted off to intercept our trusty wingman and took our rightful place in the lead. After carrier qualifications, launching a HARM from low altitude was the highlight of my time with the Navy. All the hard work and coordination paid off when that missile thundered off the rail like a freight train and flew straight and

true to the target. We rejoiced in the cockpit after the successful launch and completed our post-launch-and-recovery checks.

Our return to Point Mugu, Calif., was uneventful. After a "sierra hotel" fan-break, I lowered the landing-gear handle and checked the duty for traffic. About six to nine seconds later, I saw the red light still was on in the gear handle, and only the two main gear indicated down and locked. The nosegear showed unsafe, with no indications of getting any better.

I broke out of the pattern and asked my wingman to check me. We left everything where it was until he came alongside and told us the mains looked OK, but the nosegear appeared to be in an intermediate position and sort of "flopping" back and forth—not very comforting.

We stayed below 250 knots, broke out the checklist, and went through all the steps. We recycled the gear, then alternately tried to load and unload the aircraft. Next, we yawed the jet left and right, to no avail. We maximized crew-resource management by discussing other options and previous experiences.

Discussions continued with the tower and our ground personnel. We located an LSO, worked up a game plan, and discussed the situation with everyone. Fuel was not yet a factor, since we still had 30 minutes'

worth. We cleared our wingman to land first, in case we closed the runway, airfield or countryside. We discussed doing a touch-and-go to bounce the gear into the down-and-locked position. The LSO felt this idea might not be good because the nose might come down and scrape the runway if the hook missed the wire.


We decided to touch down in front of the approach-end arresting gear, with the hook lowered. After rigging the short-field cable, the first pass ended with a hook skip or bolter. This gave the LSO a chance to see the gear up close. He reported the nosegear appeared to be hanging loose and swinging in the breeze like a broken arm—not good. "Man, is the skipper gonna be mad if I break his jet in California!" I thought.

I flew a slightly flatter approach on the next pass and touched down on-speed, about 100 feet before the wire. I was prepared to shut down the engine to prevent foreign-object damage if the nosegear didn't hold and

we became a high-speed runway scraper. I also thought about the go-around if the cable or hook failed. I held the nose off in a traditional Air Force "aero brake" attitude I had tried to teach my Navy brethren. I caught the wire, and the deceleration threw the nosegear forward and locked it before the nose came down. After we rolled back, the ground crew pinned the gear, and we taxied clear.

Postflight inspection revealed all actuators attached to the nose-landing gear had sheared at their attachment points sometime during the flight or initial gear extension. The nose-landing-gear extension, retraction, and over-center lock actuators still were attached but only at one end. No amount of recycling would have locked the gear down.

After another warm California night, we were told to "stiff leg" the aircraft home. That morning, we pinned the nosegear in the down-and-locked position, with the option of raising the mains if we lost an engine. This precaution added time to the return trip, but, hey, flight time is flight time.

The first lesson we learned was to work on crosstalk between the squadrons and from higher command. This problem had occurred several months earlier to another EA-6B, but our squadron never had been briefed on it. Second, use the ORM you receive in training. What seems like a good idea to you might not seem so hot to someone not at the controls. Last, the flight's not over until the bird is tied down and you are heading in for a slider and some auto-dog. Keep some fuel as a pad in case the unexpected happens. The Prowler continues to age until the EAF-18E/F/G come online, so we need to stay abreast of current and potential problems that may come up within the fleet. Keep making suggestions to keep 'em flying. 

Maj. Beattie flew the EA-6B with VAQ-133, and now flies the F-117 with the 9th FS, Holloman Air Force Base, N.M.

We cleared our wingman to land first, in case we closed the runway, airfield or countryside.

Blinded by the Light

By Lt. Andy Perez

It was the day every P-3 pilot looks forward to after checking into a squadron: the first flight as a patrol plane commander. The XO was coming back from a pilot trainer, and we would turnaround the plane so I could get some pattern bounces.

He said the pattern was open, but it soon could go IFR. The weather brief confirmed a layer was rolling in. We were ready for an easy preflight, and this event was a great chance to get a few actual approaches. As the XO stepped off the plane, he congratulated me, and his last words were, prophetically, "Don't break my plane."

The winter weather in Misawa is cold, and the cloud layer normally tops out at 4,000 feet. Any visual moisture is usually in the form of snow. Although it was unseasonably warm this day, we expected the temperature to dip below the freezing level as the night wore on.

Soon after we were airborne, the VFR pattern closed because of weather. I requested multiple approaches to complete our monthly landing requirements. We went IMC at 800 feet and remained so until we descended on final. It couldn't get any better than this: first little taste

of "A" time and great training to boot. The OAT gauge indicated we were at or slightly below freezing.

On our third approach of the night, an intense flash lit up the entire flight station. All four crew members were in the flight station and were blinded four to five seconds. Our first thought was, "Holy cow," or words to that effect, as we tried to get our night vision back. I backed up the other pilot as he tried to control the plane while we regained our focus, literally.

I contacted Misawa METRO and asked if they were anticipating any lightning. They said it was impossible for lightning to exist because the cloud tops weren't high enough. I told them it actually was quite possible. My burned corneas were proof enough for me.

Our next concern was whether we had been hit. We felt no changes in flight characteristics, and the instruments appeared to be operating normally. I talked it over with the flight engineer and the copilot, then called base to inform them we may have been struck by lightning.

Maintenance told me that a lightning-strike inspection lasts about two hours. Talk about bursting my bubble—reluctantly, I told my copilot,




Our first thought was, “Holy cow,” or words to that effect, as we tried to get our night vision back.

“Let’s make this one a full stop.” I would have to choke down my point-eight hours of “A” time and like it.

Once I got the plane on deck, maintenance found evidence of a lightning strike. The lightning entry point left a quarter-sized hole in the left wing tip. The exit took off a “V” shaped piece from the left horizontal stabilizer. Two static wicks also were charred.

As it turns out, the conditions were perfect for us to have built up our own static discharge.

Flying in the clouds, warm air over cold air, and at the freezing level, we became a lightning rod. I vaguely remember learning this in those METRO classes during API. While I brain dumped that info a while ago, I’ll never forget it after having been blinded by the light.

The XO was waiting for me when I brought the keys to pop’s car back to maintenance. He said I made the right decision to bring the plane back and laughed about my perfect timing. 

Lt. Perez flies with VP-40.

The Wily Band

By Capt. Greg Mavor, USMC

I was a nugget and just had finished my first Combined Armed Exercise in 29 Palms, Calif. Up to that point, most of my flights had been air-to-ground sorties, with a few air-to-air training codes mixed in.

We began our air-to-air training block with the walk-before-you-run mentality. The 1 v 1 training started with flats and rollers, then offensive and defensive maneuvers, followed by category fights. The training ended with a fighter pilot's favorite: Cat. 4 butterfly-neutral sets. After a week of 1 v 1s, we began 2 v 2 training. Again, we took the walk-before-you-run approach: We started with VIDs and ended with trying to kill some bandits. We began our last week of training with 4 v 4s against Vipers from South Carolina.

An incident reminded me of a story a teacher had told me, summing up aircraft mishaps. When an aviator begins his flying career, the man upstairs places an unknown amount of pencils in a jar. And each time you have a close call, whether induced by yourself or an outside factor, one of those pencils is taken. When an incident happens down the road, and there aren't any more pencils to be taken, you can guess what happens next. On this day, I felt many pencils had been taken from my jar.

South Carolina was enjoying a beautiful spring day. I kept telling myself, "I can't believe they pay me to do this." Our four ship of Hornets provided red-air presentations to Vipers stationed north of us. The fight would occur in a warning area off the coast. Flight lead did a terrific job in the brief, explaining the maneuvers for us to

simulate threat countertactics.

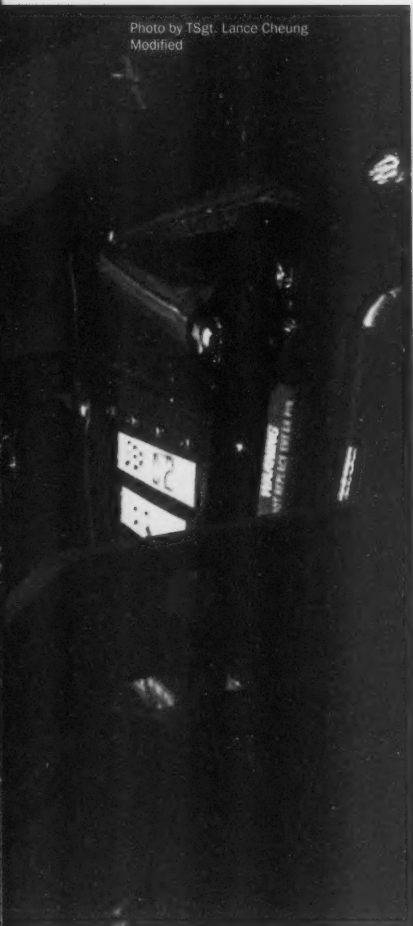
We would be conducting a VUL period. At the "fights on" call by the fighters (Air Force F-16s), the air-to-air fighting would commence, and it would not stop for a given period. Only a KIO call by a pilot, possibly for an emergency, would stop the exercise.

The takeoff, en-route flight, and G-awareness maneuver went as briefed and were uneventful. We had a positive check-in with the Vipers on the safety-of-flight frequency, and we were ready to play. We pushed off our CAP point in



its

Photo by TSgt. Lance Cheung
Modified



formation. I was Dash 2—ready to lay waste to any Viper in my way. At the action point, we split into two groups; one group flowed east then north, the other flowed west then north. I followed my flight lead throughout the maneuver and placed myself in a position for the visual fight. Shortly after we turned north, there was a kill call on my wingman. One down, three to go for the Air Force F-16s.

My flight lead

immediately turned out 90 degrees and exited the flight, flowing south back to CAP. Although angered at the situation, I proceeded, alone and unafraid.


As briefed, I would try to reach their CAP point and simulate a bomb drop. I quickly picked up a contact on radar, and my heart began to race. It was revenge time. With 10 miles to go until the merge, I didn't think they saw me. As I looked outside, I tallied two Vipers, in combat spread, heading south—I'm in. On my roll-in to gain the offensive, I observed a break-turn into

me by both aircraft. We were three miles apart with over 1,000 knots of closure. The Vipers were in a lead-trail formation.

I shot a radar missile on the leader at three miles and transitioned to the wingman. I merged with the leader, high-to-low, with me as the high fighter. I saw him start a right-hand turn, level with the horizon. I took my eyes off him and padlocked his wingman, looking to make a safe pass. I leveled my wings and stated my intentions of what I thought was going to be a left-to-left pass. I realized we were on a collision course and took evasive action, maneuvering low and left.

It looked like we passed about 250 feet apart—less than 500 feet is considered a near-midair. There was a kill call shortly afterward, on what I believed was me, from the first fighter I merged with. I rogered the call and went back to CAP with my heart racing from that close pass. It must have taken 15 minutes for me to calm down.

What caused the near-midair? As I passed the first Viper I had merged with, I assumed the wingman had me in sight because of the break turn and how his aircraft was pointed. I later learned in the debrief he did not have a tally on me but just was following his lead. Bad on me for assuming he had sight; this is a training-rule violation on my part. I leveled my wings and stated my intentions for a left-to-left pass. This plan did not work because the Viper followed his wingman without sight of me and checked right, which put us on a collision course.

Air-to-air combat is dangerous. My goal was to shoot and kill as many Vipers as possible. I'm sure it was the Viper pilot's goal to get a kill as well. Hazards can occur when both pilots have that mind state; you can expect having closer-than-normal passes and being out of position. Flying 4 v 4, air-to-air, or large-force exercises are some of the most dangerous events. Be safe, but don't lose the edge. 

Capt. Mavor flies with VMFA-312.



SAR JUMPS FOR BIRDCAGE FOR ONE

By AW2 Bryce J. Williams

During the beginning stages of Operation Enduring Freedom, USS *Cowpens* and HSL-51 Det 2 were working in the Guam area. Most of our time was spent working on qualifications and preparing for the global war on terrorism. Little time was left for unit-level training, especially for the helicopter detachment.

On Sep. 28, 2001, we had an opportunity to conduct SAR jumps for our SH-60B detachment aircrewmembers. Anyone who ever has been to Guam knows most days have near-perfect weather. This day was no exception: no clouds and clear visibility for miles. Most importantly, at least for SAR jumps, the water temperature was 82 degrees Fahrenheit. The beautiful tropical waters and warm weather beckon everyone to take a swim. Today, however, only the detachment AWs were going to get the privilege. We were the envy of all the crew.

Beginning with the brief, the aircraft commander made sure everyone knew the mission details, the ORM

assessment was complete, and all safety precautions were in place. We discussed jump profiles and potential emergencies. We had no idea we would respond to an actual emergency.

The jumps were set up near the port bow of the ship to give bridge observers a good view. The jump profile was 10 feet and 10 knots; one tap on the shoulder, release the gunner's belt; three taps, jump, jump, jump, swimmer away, swimmer OK. The first jump was uneventful. With the swimmer back in the aircraft, we set up for the second jump. It didn't go as smoothly.

The swimmer lost one of his fins when he hit the water. He was able to find the missing fin but couldn't put it on. The swimmer gave a frustrated pickup signal, and, when he signaled he was hooked up, I started to raise the hoist. Everything looked good as I lifted him from the water, but, as he cleared the water, he started to spin counterclockwise. As I continued to lift him, the spinning accelerated, and he started swinging around the circumference of the helo. I tried to counteract the swinging motion by stopping the hoist. This stopped his swinging, but he kept spinning.

I told the pilot what was happening and what I was doing to assist the swimmer. I motioned the swimmer

to kick back his fin to stop the rotation, but this move created more confusion. Since the swimmer almost was to the helo and appeared to be under control, the pilot had me continue to lift. The swinging began again but not as badly. I stopped the hoist just below the helo and tried to stop his spinning and swinging. The swimmer then grabbed the mainmount, and the motion stopped. I helped him inside the cabin, made sure he was OK, and prepared for forward flight.

The swimmer still was a little shaken, even after he was settled in the cabin—and rightfully so. The two of us decided this was a good time to switch roles; he would be the hoist operator, and I would be the swimmer. Neither of us thought about taking a couple of extra minutes to inspect the hoist and see if it was damaged or birdcaged. The swimmer still was clearing his head from the spin, and I was anxious to get in the water. Had we taken the time to inspect the hoist, things may have turned out differently.

The helo set up for another jump profile, and the jump was a success. I hit the water and realized what being in the tropics is all about. The ocean was like a warm bath; it felt incredible. I would have been just as happy to call off the jumps, so I could have taken some time to enjoy the water, but, of course, the “show must go on.”

I passed the pickup signal, and the hoist came down without a hitch. After hookup, I gave the raise-hoist signal and left the water. As I went up, I looked at the ship and saw the detachment’s personnel watching us from the bow. It felt good knowing they got to see what we do for a living. Then the hoist stopped.

I looked up to see I was just 20 feet below the helo (60 feet above the water) when my junior aircrewman gave me the hoist-jammed signal. The first thing that went through my head was he must be playing with me. If the cable broke, I would fall 60 feet into the water. I also realized the hook was below the level of my head. I thought it was possible that when I hit the water, the hook could swing back, hit me in the head, and possibly knock me out. I now fully realized how dangerous this situation was.

I saw the hoist operator pull what looked like the cable cutters out of the SAR bag and stage them by the door. I later learned it actually was the Chicago grip,

which is used to keep a damaged cable attached to the aircraft.


I thought the hoist operator was going to cut the cable, instead of trying to fix the hoist. I quickly gave the PC signal for hover down. I did not want to be cut from that altitude!

The helo began to descend. I was not sure how low they planned to go, so, with all my strength, I grabbed the top of the hook and pulled up. I overlaced my fingers on top of the hook, opened the locking gate with my thumbs, and released myself from the hook. I fell, back first, into the water.

Now that I look back on the situation, I never should have tried to get out of the hoist. With all that adrenaline pumping, I didn’t realize I had no depth perception when looking at the water. I should have waited until my feet hit the water before I worried about getting off the hoist. This situation could have been discussed better during the ORM brief, so the whole crew would have been on the same page.

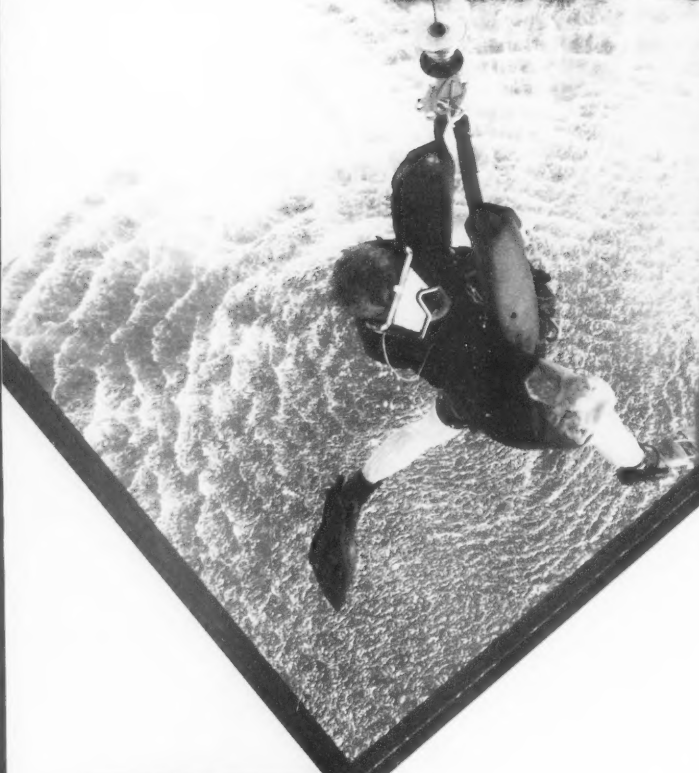
I looked up at the helo and gave the OK signal. The helo moved to the left to keep an eye on me as they radioed to the ship to send the rigid-hull inflatable boat (RHIB). It was a little embarrassing, as an aviation-rescue swimmer, to be rescued by the ship’s RHIB. I rather would have swam to the ship and climbed aboard, but this ride was my only ticket back. The hoist operator hauled in the rest of the cable and secured it to the helo.

After the helo landed and I returned on board, I discovered the cable was severed in three places, and several gears were torn off completely. The only thing keeping me in the air was that cable, which had pinched between the two main gears.

I’m very relieved the hoist operator followed the NATOPS procedures. If he had continued to use the hoist after it jammed, the cable easily could have separated. Had we examined the hoist before the next attempt, we may have noticed something was wrong, which would have prevented my hanging helpless 60 feet above the water. I’m glad the crew lowered me to the water, near the awaiting RHIB. Everyone got back to the ship, but, had this event been an actual open-ocean SAR, the outcome could have been far different. 

AW2 Williams flies with HSL-51 Det 2, assigned to the Forward Deployed Naval Forces (FDFN), Atsugi, Japan.

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TWO:

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AW2 Williams flies with HSL-51 Det 2, assigned to the Forward Deployed Naval Forces (FDNF), Atsugi, Japan.

By Gary Schreffler

Date: Feb. 12, 1986

Squadron: HS-12, embarked on USS Midway

Aircraft: Speargun 610, BUNO 152136.

Mission: plane guard

Crew: HAC: Lt. Ron Burton

H2P: Lt. Jeff Lunn

ASW 1st Crewman: AW2 Gary Schreffler

ASW 2nd Crewman-swimmer: AW3 Rusty Moore

It was a rainy night, with poor visibility. Lt. Lunn was in the right pilot seat, Lt. Burton was in the left pilot seat, I was in the left sonar seat, and Petty Officer Rusty Moore was sleeping on the troop seat.

After the last fixed-wing aircraft had trapped, we were tasked to identify a surface contact 80 miles from the ship. As we headed to the vector, our aircraft, without warning, began to vibrate violently. I looked forward from sonar and only could see a blur of shapes. I saw the upper and lower PAX doors fly open. Fearing catastrophic damage if the doors departed the aircraft and hit the rotor system, I unstrapped and tried to secure the doors. I managed to haul up and close the bottom one. I then got hold of the upper door and shut it, but it again popped open and departed the aircraft.

By this time, the vibration was worse. I heard a loud grinding noise coming from the transmission area. I decided the aircraft was in peril and immediately strapped back into sonar—tightly.

I turned around, looked at Rusty, and told him to prepare to ditch. He gave me thumbs up. I could hear the pilots troubleshooting. However, they essentially were blind, because the instruments were a

blur. The HAC expressed fear about flying into the water. I asked if he intended to ditch and he replied that we didn't have any other choices. I, by touch, turned my ICS dial to transmit and began broadcasting Maydays. The lower PAX door again sprung open, departed the aircraft, and I saw it fly past the sonar window.

The aircraft started a rapid turn to the right; the door had hit the tail rotor. I

punched out the left sonar window, turned to Rusty, exchanged thumbs-up signs, and braced for water entry. The sound was deafening, and I wasn't prepared for it. We hit the water rapidly while yawing to the right, with a pronounced right wing, nose-down attitude. The right side of the cockpit took the brunt of the force and collapsed. When we hit the water, my leg flew up, and my knee hit the lip of the pullout table of the sonar console—the scar still is on my knee. The aircraft immediately filled with water—and I mean immediately—no chance for a breath of air.

Between the noise and the sudden pain in my knee, I became disoriented. As I started to panic, I had a very clear image of the helo dunker. I was filled with calm because I knew getting out of the helo was no sweat. Thank God for NACCS.

I grabbed my reference point and pulled myself out the sonar window. What happened next has puzzled me to this day. I remember kicking off the side of the aircraft, gliding, and then popping my flotation. However, rather than rise to the surface, I came up underneath an object, with something on either side of me. I panicked, thinking I had screwed the pooch and had inflated inside the aircraft. Fortunately, as I thrashed about for a few seconds, I realized I was under the stub wing, not inside the aircraft. I reached for the leading edge of the wing and pulled myself to the surface. At some point, my upper left lobe got punctured, so I had only half my flotation. I owe a beer to the guy who designed the thing because I still floated without any real problems.

I yelled when I was on the surface and Lt. Burton called back that he was OK, but he did not know where Lt. Lunn or Rusty were. Looking around me, I could see a sponson and a lot of debris floating on the surface. The aircraft was gone, save for a large rush of bubbles that soon subsided.

Lt. Burton and I still were calling frantically for Lt. Lunn and Rusty when Lt. Lunn surfaced a short time later. He said the aircraft hitting the water had caused his side of the cockpit to collapse, shoving his head into the instrument panel and blocking his window. He had egressed through the broken chin bubble and nearly had become trapped in it.

The three of us connected ourselves together and used my flashlight to sweep the surface. We continued calling for Rusty, who by now, had been down several minutes. Suddenly, he exploded to the surface, in a full panic, flailing his arms and legs. He calmed down after several minutes and told us what had happened to him.

When we hit the water, the cargo door—unknown to

Rusty—had slammed shut. However, he assumed it still was open. He unstrapped and pushed himself toward the cargo door, unaware it was closed. When he hit a wall, he thought the currents had spun him around, so he went back to the other side. He never used handholds for reference points.

By this time, Rusty's lungs were on fire. He was completely lost and confused by all the debris in the after station: raft, sonobuoys, flares, helmet bag, SAR bag, and God knows what else. Knowing he was drowning, he decided to end the pain by breathing in water. He had quit. When he took a breath though, he felt air enter his lungs. As incredible as it sounds, he was in a small air pocket. He was breathing but still had no clue where he was and he remained in very serious trouble.

After a short while, the air got stale, so he decided to continue searching for an exit. He started trying to kick his way through the sheet metal. As he was kicking, Rusty felt something give, and when he reached down, he discovered he had kicked the cargo door open.

He then egressed the aircraft. By this time, though, he was quite deep. The flight surgeon estimated the depth to be triple digits. Because of this depth, nothing happened when he pulled his SAR-one inflation.

Rusty has no memory of what happened next until the rest of us were holding him. It is difficult to put into words how happy we were to all be on the surface together. It's amazing all of us lived to tell the tale. After being in the water for nearly an hour, we were rescued. We asked the rescue helo to not use any flares because we were covered with fuel. We all suffered rashes from the fuel. Only rotorheads nearly can drown in a helicopter and then cheer when another one comes to pick them up.

Rusty was a young kid who rarely took things seriously. When we did egress training, he always screwed around, and cheated by lifting the blindfold. This attitude nearly cost him his life. It is OK to have fun, but, when it comes to training, follow the procedures.

Before pulling your flotation, make sure you are clear. I still am not sure how I came up under the stub wing, but I assure you it was an unpleasant sensation.

Be aware of fuel in the water before tossing in a flare.

Epilogue: The pilots were awarded air medals. I lived to fly another day. As it turned out, we were the last crew to ditch without HEELS or HEEDS: emergency lighting and air. I am sure these items would have helped Rusty considerably.

Gary Schreffler was in HS-12 when this incident occurred.

We received a letter from LtCol. Hank Kramer (June Approach), who describes himself as "a retired USAF F-16 driver who has been reading Approach since the 1950s and subscribing to it for over 20 years." He asked an apparently simple question: "Why does it seem that USN pilots are so reluctant to declare an emergency? This was never a big deal in the Air Force." At one time, at least, it was part of the Tactical Air Command flight regs that if you were airborne and dealing with a problem covered by the emergency procedures section of the tech order, "you will declare an emergency."

The aviation bubbas here at the Safety Center agreed that, around the boat, most aviators are reluctant to use the "E" word during minor emergencies, because once you do so, you have lost all autonomy to handle your own issue. In other words, you've just invited the whole ship to come and sit in your lap, and also guaranteed that you'll have a lot of explaining to do on deck. With that proviso, the staff here believes that most Navy flyers know when it is appropriate to call an emergency. We correctly surmised that our readers would be glad to respond, as well. Here's some of their feedback.—Ed.

Capt. Glenn Berquist, USAF, 37FTS/DO

"I got my wings in the Navy at Beeville in '87. I am now an Air Force pilot instructing in the T-37 at Columbus AFB. The difference in instruction, comparing the Navy and Air Force, is huge. Two separate cultures exist. The Navy focused on knowledge of systems and using airmanship to handle emergencies; if it got real bad, we'd even pull out the checklist in the Navy. In the Air Force, it is strict adherence to procedures. Students are given an unsatisfactory grade if they even forget to say 'Maintain aircraft control.' Such airmanship is a given in the Navy, not so in the Air Force—students have to describe just what they'd do to maintain aircraft control, such as 'maintain wings level.' Imagine that being required CNATRA verbiage. From day one, the Air Force stresses that if you have to perform just one step of any emergency checklist, then declare an emergency, and you'd better have the pocket checklist out, referring to all the procedures. The result is Air Force pilots here declare emergencies far more often than I ever experienced in the Navy."

LCdr. Jim Ridgway, VP-94

"Having flown the T-34, T-44, P-3C, T-2, P-3 again (and currently), I have to say that I am not at all reluctant to declare an emergency should the situation dictate. I have operated only from land, never from the ship. I know there are many instances in the P-3 where a simple malfunction requires the flight to be terminated, yet is, in no way, an emergency situation. As a T-2C instructor, I found that I made several emergency calls and was adamant with my students, telling them to declare an emergency if there was any doubt at all as to whether or not they should. The priority handling far outweighs any 'arm-chair' quarterbacking you may receive after the flight."

Pete Ryan (@flightsafety.com)

"As a retired Army aviator, I couldn't resist the opportunity to make this a tri-service discussion. In the same issue of *Approach*, the lead story ("Worst Case Scenario") detailed an Army accident that caused all of us associated with Army aviation to hang our heads in shame. An appalling lack of leadership, discipline and character resulted in a tragedy. The author was gracious enough to point out that this was not a uniquely Army problem. That brings me to naval aviators' supposed reluctance to declare an emergency. I believe there is a built-in hesitance to declare an emergency, but I also believe it's more widespread than any one service or activity.

"Calling 'Uncle' attracts a lot of attention. Although we know that attention is focused on providing help, it also bares our souls and our mistakes to the whole world. We know that the largest percentage of aircraft mishaps have human factors as causes, so we are too often reluctant to 'fess up to having gotten ourselves in a bad spot. Ever run low on fuel? I mean lookin'-for-a-place-to-put-it-down-even-with-the-field-in-sight low? Ever said, 'Lord, get me past this one, and I swear I'll never do that again,' after a particularly bad decision about the weather? (Of course, these sorts of things never have happened to me personally.)

"We military flyers have a lot of ego on the line every time we slip the surly bonds. To acknowledge that we are not in complete control of the situation is an enormous confession that we are, somehow, well, human."

Davy Thorn, investigator, Lockheed-Martin (also a former A-6 BN and Naval Safety Center aircraft-mishap investigator)

"On a carrier, an IFE usually means the ship has to clear the landing area immediately. That is no small feat, has inherent risks, and disrupts the next launch cycle. That said, if we had an in-flight emergency (fire, bleed-air failure, engine problem, etc.) we would declare an emergency. If it was something that you could live with until the normal recovery time, you would inform either the Air Boss (day/VMC) or Air Ops (night/IMC) of the nature of your problem, ask for a squadron rep (usually the skipper or some experienced pilot or NFO), and come up with a game plan. Back on the beach, you might declare an IFE for this situation; on the boat, it is not an emergency, but you are

dealing with the situation professionally and expeditiously... We were taught that everyone on the ground was trying to kill you, and it was your responsibility to fly the airplane and ask for help as needed. If someone on the ground is bugging you while you're trying to deal with a systems problem, you either ignore him or politely (or otherwise) tell him to be quiet until you get the problem sorted out. As far as being an NFO, on several occasions (especially when I was the more experienced crew member in the cockpit), I was the one to call knock-it-off so that we could deal with a problem or head for home."

Cdr. Stephen Beckvonpeccoz, Executive Officer, VAQ-138

"I believe naval aviators are reluctant to declare an emergency, but I don't think it's necessarily intentional. As a culture, we just never train to say it. In carrier aviation, so many emergencies happen around the ship that we get used to thinking in terms of blue-water recovery aboard Mom. In those cases, declaring an emergency doesn't buy you anything. Instead, we calmly discuss it as a crew and talk to our wingman, the rep, the boss, the tanker, Air Ops/CATCC, and even to the controllers. We discuss how it will affect the recovery, the rest of the airborne airwing, and the deck. Then we set ourselves up for whatever kind of recovery is required. Even when I came about one minute away from needing the barricade rigged two flights in a row during this past cruise, I never declared an emergency because it already was obvious to everyone who needed to know. Ashore, we apparently train the same way. We just handle emergencies using NATOPS and sound aircraft knowledge, tempered with situational awareness and headwork. Then we decide on a course of action, tell the controllers what we'd like to do, and then do it. Today this process is called time-critical ORM, but we've been doing it since before McClusky rolled in on the carriers at Midway.

"The only time I personally declare an emergency is when I want someone ashore to do something for me while I figure out how I'm going to resolve my problem. An example: Having field personnel rig the gear or change the runway, or recommending a controller land nearby low-state aircraft, or calling for an LSO. And, this action has to be worth the 20 questions I'm then going to get over the radio.

"The Air Force operates differently than we do. We don't have an SOF (supervisor of flying) officer who can make us RTB and land, and we don't use Guard frequency to coordinate things. Perhaps we need to rethink what saying the 'E' word will buy us."

Lt. Philip Kase, VT-27

"I think it boils down to training and command culture. My naval experience has been that commanding officers and department heads put out taskers and expect the junior officers to complete the assignment without a lot of direction. Complete the mission however you want, just don't violate the rules, regs and SOPs.

"I have spoken to many AF pilots, and their culture is different. Their department heads are very much in the weeds and tell the JOs how to do the job. The AF rulebook tells you 'what to do' vice the Navy's rulebook which states 'what not to do.' In the Navy, from Fam One in flight school, students are given simulated emergencies 'in the aircraft.' The student is expected to handle the emergency according to NATOPS, using sound judgment. It is my understanding that in AF flight training, no simulated emergency is given 'in the aircraft,' only in simulators and in what's known as 'standups.' This is where students are asked to state emergency procedures in a ready room/classroom setting in front of their peers and instructor pilots.

"The difference in training may encourage Navy pilots to handle the emergency and tell ATC, a wingman, or a maintenance rep of their intentions and get recommendations. When flying in the shipboard environment, and an aircraft has an emergency, the pilot handles it with the realization that his emergency should not preclude others from being able to land at the only landing site: the carrier flightdeck. As well, his emergency may force others in the battle group to assist him, vice performing their primary mission, which is to protect the battle group. He is expected to handle the emergency with minimal effect on the battle group force that may be operating 12 miles off the coast of an unfriendly country.

"In the AF, while the emergency aircraft pilot is handling the emergency... an SOF is responsible for helping the aircraft and can tell all other aircraft to hold position, depart the pattern, etc. This position doesn't exist in the Navy."

LCdr. Joe "Gonzo" Barnes, CNAP Force LSO

"The use of the 'E' word in carrier operations is usually unnecessary. When we are operating around the ship, we are in constant contact with aviators. The captain, air boss, air operations officer, and LSO are all aviators. They are listening to the comms. When someone calls and says they have an engine failure, everyone knows the gravity of the situation, and the wheels go into motion to solve the problem. If we were to state that we are now 'declaring an emergency,' it would not magically make things move faster. The use of the 'E' word is to ensure that the controlling agency understands that we are now going to cancel the mission, deviate from FARs, and land wherever and whenever we choose. In carrier aviation, we don't operate under all the same rules, don't have all those choices, and may have to wait to recover. Our representative will reference NATOPS and the Air Wing instruction to help us decide how to manage the problem (i.e., emergency pull forward, wait till next recovery cycle). I think that most aviators who have brought an aircraft aboard single-engine, at night, in bad weather, know they had an emergency. Did they say it? No. Did everyone know it? Yes."

ORM *Corner*

Operational

By LCdr. Tony Allou

My crew just had completed a mid-cycle night launch from USS *John F. Kennedy*, and the butterflies that always accompany me until the "Passing 2.5, kilo" call had settled down. It was time to prepare for our Operation Enduring Freedom mission and let the air conditioning work after sitting in a closed, hot, humid cockpit for 30 minutes. The mission, including transit and tanking time, was a 6.5-hour flight and a 0230 recovery. We briefed the standard emergencies and airborne contingencies, concentrating on areas that required a non-standard recovery.

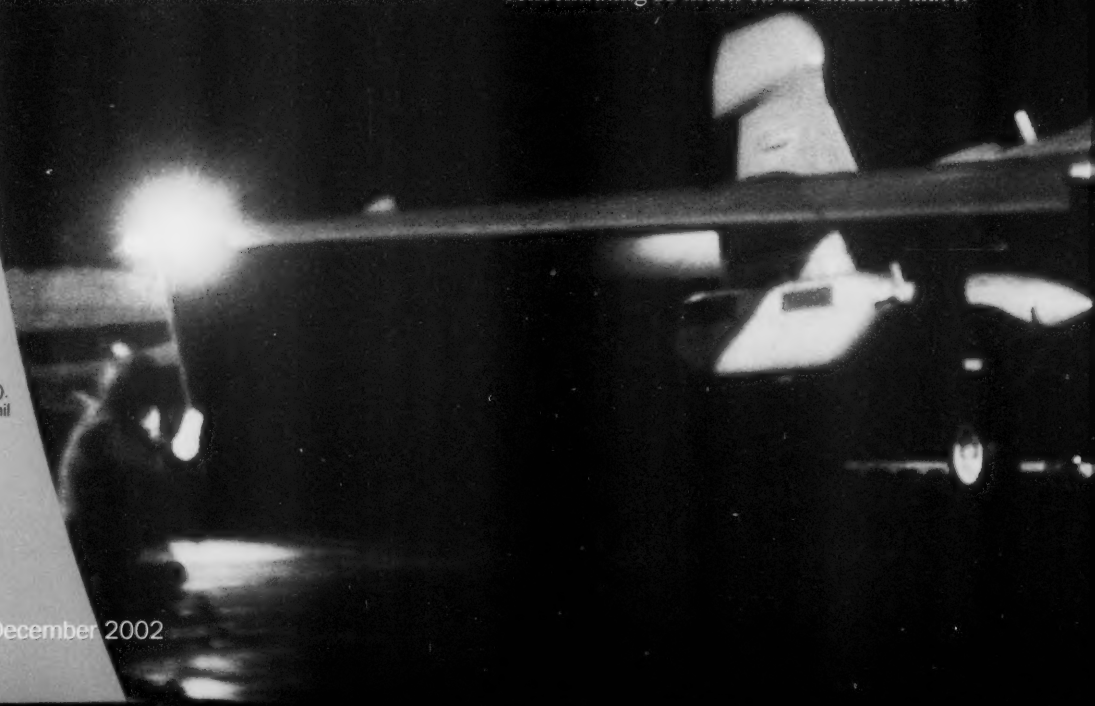
About 10 minutes after launch, the crew noticed a burning smell in the cockpit. It cleared quickly, and a cockpit-security and cir-

cuit-breaker check indicated nothing out of the ordinary. The transit to the tanker track was uneventful. An hour into the flight, we completed our check-in with AWACS and rendezvoused with our tanker. As we approached port observation, I heard a slightly high-pitched whine coming from below my seat.

After tanking, we slid over to starboard observation, detached, and proceeded on mission. The pilot asked ECMO 1 to cool the cockpit as we climbed to our transit altitude. I felt the air blowing out of the vents beside my left console, and it was hot. After 15 seconds, ECMO 1 reported no change in air temperature, despite his holding the switch to full cold. We were concentrating so much on the mission that it

ORM Corner

Please send your questions, comments or recommendations to Ted Wirginis: Code 11, Naval Safety Center, 375 A St., Norfolk, VA 23511-4399, (757) 444-3520, ext. 7271 (DSN-564). E-mail: twirginis@safetycenter.navy.mil





Necessity

took a few minutes for the wheels to turn in our brains, and we started to troubleshoot the problem.

The air was hot, but it was not hot enough to trigger the EA-6B emergency procedure. A full-cooling failure would have allowed unregulated 12th-stage bleed air into the cockpit. This condition would have been intolerable, requiring the execution of the boldface procedures and shutting down all bleed air in the aircraft. We continued to head toward station and began to execute our mission while we discussed our situation.

We decided not to shut off the bleed air, since there were no smoke or fumes. The hot air

was bearable. We verified all the environmental-control-system-related circuit breakers were in. After descending to our mission altitude, we discussed what could be done to make the cockpit more comfortable. If the cockpit became too hot, we would continue with the steps outlined in the EP, without actually shutting down our aircraft bleed air. Following the EP would involve shutting off the cockpit air and opening the ram-air valve to let in the outside air. With ram air providing the only source of air pressure, the cockpit and ambient air pressures almost would be equal, instead of having the 8,000-to-9000-foot differential that was normal at our operating altitude.

As we discussed our condition and whether to continue with the mission or return to JFK, we focused on how necessary it was to have a Prowler on station. If this had been a normal sortie around the ship, or if another Prowler could have taken our tasking, the decision would have been an easy one: RTB. Conditions did not warrant returning to base.

We were supporting a direct-action mission on the ground in progress, confirmed by the flash of supporting fire on the ground. To solve the dilemma, we had to think outside established patterns. We had determined it was not a full-hot condition, but the heat was severe. Our mission started with a lot of sweating, and now we were in for more



Photo by PH2 Jeremy Hall

than four hours of dehydration before heading to the carrier for a night recovery. We discussed everyone's mental state, our fatigue factor, and our water supply. The food we had brought was no good to us; the ham-and-cheese sandwiches at 100-plus degrees were not very appealing. I played devil's advocate while the mission commander, one of the squadron's senior pilots, sorted out the situation and weighed our options. In the end, operational necessity dictated we remain on station.

Fortunately, the failure that caused our current condition happened after we had cold soaked the interior of the cockpit, which allowed us to tolerate the hot air for some time. As we headed back to our second tanker of the mission, we finally cried "uncle" and let the ram air take over. We watched the cabin pressure rapidly climb to several thousand feet below aircraft altitude. We continued to monitor the pressure as we climbed.


We approached 25,000 feet and switched to cockpit air to minimize the chances of extreme cabin-pressure altitude and the threat of a physiological episode. Once off the tanker, we continued the mission. We switched to ram air on the descent, and every 10 minutes or so, we turned on the defog to maintain forward visibility. When we were 10 minutes off the second tanker, we received information our relief was going to be an hour late to station. Groans emanated from the crew, and we reassessed our situation. Everyone still was positive and motivated, despite our condition. "Adapt and overcome" was the catchphrase running through my

Their lost capability was a mission requirement, so we had another 90 minutes in the heat. The mission continued uneventfully, with cycles of ram air and heat, depending on the comfort level of the crew.

The flight ultimately lasted over 8 hours, including four trips to tankers and concluding with a night CV-1 recovery to an OK 4-wire. After shutdown, we hauled ourselves and our empty water containers from the aircraft and waited to see if the failure could be found. It turned out our forward turbine had seized, preventing the main-heat exchanger from generating chilled air for the cabin. The aircraft still was getting ram air over the cooling fins, but most of the efficiency of the exchanger had been lost. Enough ram air was in the exchanger to cool the bleed air to a tolerable level, which allowed us to continue the mission.

Operational necessity is a concept that rarely is invoked as a reason to keep an aircraft in the fight. We spend most of our flight time training for combat, and the operational-risk management for such flights is simple. "If there is doubt, there is no doubt," is a classic phrase applied to such sorties. In a combat environment, time-critical ORM becomes quite different. We weighed factors such as fatigue, mission necessity, aircrew experience, and the health of the airframe to reach our decision to remain on station.

When you find yourself in a similar situation, make sure you accurately assess your situation and capabilities to determine if you meet the high threshold of operational necessity. In our case, we believe we came up with the proper

solution because of the crew-experience level and our assessment of the mission. In our final analysis, the benefits far outweighed the risk. 

LCdr. Allou flies with VAQ-140.

OPNAVINST 3710.7S, the NATOPS General Flight Operating Instruction, states that operational necessity applies

to a mission associated with war or peacetime operations in which the consequences of an action justify accepting the risk of loss of aircraft and crew.—Ed.

We watched the cabin pressure rapidly climb to several thousand feet below aircraft altitude.

mind as I took another long draw from my water bottle. A third trip to the tanker should have sent us home, but, instead, it saw us heading back to station.

We talked to our inbound relief and found out they had suffered a mission degradation.

Land Ho!

By Lt. Bill Greiner

We had a 0400 brief, a 0600 takeoff, a 0700 vertrep, a 0930 recovery, and a 1500 pier-side—for three days. We were one month into a six-month cruise, open ocean, and in the groove. Everything was as it should've been, or so we thought.

We launched to starboard, into the darkness of a moonless morning. We flew straight from the ship for five miles before turning, so the ship could bring the SPY radar to full power. The after-takeoff checklist was in progress.

As I waited for the airborne-tactical officer to finish the after takeoffs, I checked to see what our crewman was looking at on radar. Something didn't look right. A large return was six miles off the nose. Probably clouds, I thought. Out the windscreen, however, I saw nothing but stars. The ship was two miles astern; we had three miles to go. We contacted the ASTAC over HAWKLINK and asked if any islands were in the vicinity. Here's the conversation:

Pilot: "ASTAC, where's the nearest land?"

ASTAC: "Sixty three miles to the northeast."

Pilot: "There's nothing off our nose for four miles?"

ASTAC: "No sir. It looks like clouds."

Pilot (over ICS): "Does that look like clouds to you guys?"

Crewman (over ICS): "It's not real big, but it is blocking out the returns on the other side. Looks like land to me."

Pilot: "Are you sure there's not land right off our nose?"

ASTAC: "Yes, sir. The large-screen display shows nearest land at 62 miles."

We decided to turn early. If it were land, we would have seen it at that range. But, we saw stars all around, so it wasn't clouds. Something wasn't right. We didn't know how important the decision to turn the aircraft would be. We put a manual track on the closest return to

see if it was moving. As far as we could tell, it wasn't.

We had another radar return 10 miles southwest of the ship. The ship was heading northwest, right between the two returns. We could pick up the USNS ship our ship was rendezvousing with, farther to the northwest. We opened five miles astern from our ship and began to orbit in a loose racetrack pattern, as we waited for the sunrise vertrep. Still not comfortable with the cloud theory, we asked again about the land.

Pilot: "ASTAC, are you sure there's not land out here? There's not a cloud in the sky, as far as we can tell."

ASTAC: "Let me check with the TAO, but I don't show any land in the vicinity. (pause) No sir. TAO said nearest land 60 miles to the northeast."

Pilot: "Would you please check the charts to make sure?"

ASTAC: "Standby, sir." (one minute later) "Sir, there is land 030, six miles, 230, 10 miles. Highest elevation 1,200 feet."

This about floored us. The entire conversation took about four minutes. Had we not checked radar as early as we did, the ASTAC never would have warned us of the peaks 700 feet above us. As the sun rose, we could make out the near vertical cliffs rising out of the ocean and the ship steaming right between them.

Where did everything break down? Let's start with the brief. As aircraft commander, it was my responsibility to check the charts to see where we were going. Just because we had been in open ocean for the previous month didn't mean it would stay that way for the rest of cruise. I was too comfortable with the mission and didn't go to the charts. Neither did the ASTAC or TAO.

We lacked situational awareness. We launched six miles from an island and had no idea it was there. Fortunately, we remained assertive and kept analyzing the situation until it made sense. This was a huge wake-up call.

LT Greiner flies with HSL-48.

Our pilots conducted day and night field-carrier-landing practices (FCLPs) to get ready for COMPTUEX. It had been a nice afternoon, and I had signed as the plane commander for Black Eagle 603 for a formation flight. We would flow into the FCLP pattern at NBVC Point Mugu.

The formation flight got exciting as I coached the junior pilot through several maneuvers. The port engine started making audible rpm fluctuations. I remembered this problem from a functional-check flight a few days before and told the pilot to go to standby on the propeller syn

coming to a full stop on runway 27 for the crew switch.

During the last hop, I noticed we were low on fuel—approaching our SOP minimum-landing-fuel state of 2,000 pounds. I called for a full stop on runway 27 on our last approach and reviewed the landing checklist.

Everything seemed fine as the junior pilot flew the “ball” to touchdown. As he brought the power levers out of flight idle into ground idle and then maximum reverse, I noticed the plane started veering to the left side of the runway. I was about to tell the pilot to use the rudders to bring the aircraft to centerline when he said he couldn’t keep the aircraft straight.

I told him to come out of reverse and to go

Mr. Toad's Will

chrophaser and mechanical on the governing mode. The engine stabilized, and we continued the formation training.

We flew back to Point Mugu as Dash 2 and entered the break for runway 27, which is used for FCLPs because it’s where the LSO shack is located. The quartering tailwind was not favorable for the landing runway, but it was nothing we hadn’t dealt with before.

After the junior pilot completed the standard six landings, we swapped seats for my landing practice. When I finished my six landings, we did a full stop on runway 27, the shorter runway, to expedite taxiing back to the hold short for the next pilot switch. I then flew copilot for the two other pilots, assisting with their landings and, each time,

By Lt. Tim Fahey



back into ground idle. By now, we were tracking along the left edge of the runway, in danger of hitting the runway lights. I started to feed in right rudder to straighten the aircraft. In my haste, I tapped the brakes too hard, causing the right mainmount tire to burst.

As we tracked back toward centerline, my next thoughts were to put down the arresting hook and to grab the long-field-arresting gear. I quickly called tower, telling them we were trying the long-field gear. As we passed over the gear, I did not feel the expected deceleration—we had missed the gear. I immediately slammed on the brakes and pulled the fluid-cutoff pull handles to shut down both engines and prevent FOD damage. The plane came to a stop in the overrun

area, about 75 feet short of the marshy wetlands beyond the runway.

As we climbed out of the plane, I saw just the right tire had blown. The maintenance folks did a terrific job of getting a temporary wheel on the right side and towing the aircraft from the soft overrun area back to the hangar. There they fixed the mainmount and arresting hook and did a full inspection of the landing gear. A high-power-engine test on 603 was completed the next day.

The pilot reported that during the reverse checks, the starboard engine pitchlocked: The blade angle on the propeller remained fixed. In my incident the day before, a pitchlock made sense, because a pitchlocked starboard engine

d Ride, Again

on touchdown still would be producing thrust while the port engine produced reverse thrust, pushing the aircraft to the left.

I should have glanced at the engine instruments during touchdown to see what they were doing when we went to maximum reverse. Fortunately, no one was hurt, and the aircraft flew a couple of days later.

Now, during every landing, I focus on not jamming the power levers to maximum reverse. I also make sure the engine instruments operate properly. The squadron has adopted a policy of doing all full-stop landings during FCLPs on the longer runway at Point Mugu.

Lt. Fahey flies with VAW-113.



Photo by Matthew J. Thomas

Telephoto NVGs



By Ltjg. Colin Boynton

Photo by Matthew J. Thomas

After four months of patrolling the Caribbean and Eastern Pacific night skies, looking for narcotics traffic from the front seat of an SH-60B, I was so used to flying on goggles I couldn't remember when the night sky wasn't green. My nugget cruise as an H2P was more than halfway done, and my logbook had more hours on NVGs than I had total LAMPS hours before going to sea. We were quite comfortable careening through the green-tinted night skies provided by our antiquated ANVS-6s.

As everyone knows, disaster always waits until you're nice and comfy, then it lashes out. Thanks to a heads-up, assertive aircraft commander and the boring CRM classes I managed

to stay awake for, we avoided a serious mishap one late afternoon in October. But, enough of the intro, let's jump into the cockpit of Proud Warrior 434.

I was flying with our detachment maintenance officer, a first-tour aircraft commander whom I'll call, Huey. We flew to burn hours to get into phase. Flying also gave us a break from the shoe madness. While our dual 401Cs converted JP-5 into noise and vibration, we engaged in valuable aircraft-commander training.

It's amazing how quickly time flies when your gray matter is being twisted into knots. Before I knew it, we had an hour to recovery, and the sun was down. We needed to update our quals on NVG DLQs, so we told the friendly OSI

on the other end of the Hawk Link we would fly an aided recovery.

I had the controls and turned west to head to our frigate. Normally, it is desirable to goggle-up at least 30 to 45 minutes before recovery. You want to be acclimated to the NVGs' small field of view and no depth perception before placing your rotor blades mere feet away from a steel hangar face. However, the astute reader will remember we were heading west, back to the ship. In which direction does the sun set, campers? That's right. So, while the rest of the sky was pitch black, with no moon illumination, the horizon in front of us still had far too much sky glow to goggle-up. Finally, 20 minutes from recovery, it was dark enough to use goggles.

Without a verbal cue, Huey and I set up our respective sides of the cockpit and donned our goggles. Huey joked, "We must have done this before." Our transition to goggled flight had none of the fumbling for switches and wrestling with lens covers that characterized our initial NVG operations.

Every time I prep for an NVG launch, I dial in my goggles to be focused and in the correct position before I get in the cockpit, paying particular attention to the distance the tubes are from my eyes. Our det OinC discovered early that positioning the goggles any significant distance from the eye gave him splitting headaches. However, since this was a daylight launch for an NVG recovery, I had not prepped my goggles—big mistake. En route to the ship, I focused them in and moved the tubes directly in front of my eyes, but I didn't notice the goggles were as far away from my eyes as the mounting bracket would allow.

Huey let me shoot the first and only approach, which was uneventful until we were over the poop deck. I immediately noticed the trap looked very far away, and my rate of closure looked slow, so I gently pushed the nose forward.

As we drifted toward a more familiar sight picture, Huey grabbed the controls and called, "Whoa! What are you doing? Too fast! Too fast!"

I stabilized the helo, suddenly cautious and very confused. What the hell was he talking about? I looked at how far away the hangar face was from the nose. We still had about 10 feet to go before we were in position to land.

Our AW2 announced, "Ready to land. Down. Down. Down."

I was befuddled. I wasn't about to lower the collective when I could see we were not in position. Realizing it was extremely unlikely both the other crewmen totally had lost it, I turned my head to the left and looked around the goggles at the deck environment. The green-deck lights painted an entirely different picture. I was directly over the forward edge of the trap, and any more forward motion would be distinctly unpleasant.


I lowered the collective and heard the LSO say, "In the trap. Trapped."

Huey said, "OK, I've got the controls."

I concurred and asked him to wait a second before lifting for the next bounce. My sight picture was all wrong, so I reached up to adjust the goggles. When I twisted the bracket's fore-and-aft-adjustment knob, I was startled by the results. It was like the zoom of a telephoto lens. As the goggles moved closer to my face, the hangar rushed forward at me. My perceived position on the deck went from tail wheel over the poop deck to slightly forward of the butt line—in two twists.

Huey grabbed the controls and called, "Whoa! What are you doing? Too fast! Too fast!"

Night-vision goggles are fabulous, but they are not infallible and are susceptible to operator error. Like everything in aviation, you need to preflight them and prep them the same way every time. The things you do "on the fly" should be kept to a minimum, especially in an operating environment as alien as NVG flight.

Crew-resource management and common sense will save your butt. If you have a crew of three, and it's obvious your perception does not mirror everyone else's, check yourself. Re-evaluate before acting, regardless of what your eyes tell you. In aviation, optical illusions are common and can be extremely dangerous. 

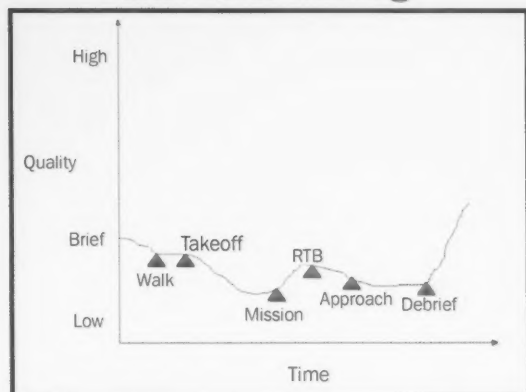
Ltjg. Boynton flies with HSL-42.

Basic Unit-Level Training From "Home Plate"

From an ORM perspective, this type of hop has the potential to be the most dangerous because of complacency. Having said that, basic training possibly can recover from a shoddy brief. Do I recommend this briefing technique? Obviously not, but one can recover somewhat in a mission where everyone is very familiar with all of the mission aspects.

Let's use a single EA-6B, SEAD mission, out of NAS Whidbey as an example. All the aircrew are familiar with getting in and out of NASWI. They can spout HARM timelines in their sleep and just about have the FCC-jammer-deconfliction frequencies memorized. How hard can this be? Here's a graphical depiction:

Unit Level Training



Brief. Fairly low quality. Whether driven by complacency or myriad other reasons, this crew was not "wowed" by their briefer before they walked.

Brief to walk. The decline in quality here is attributable to confusion and unanswered questions from the brief. The "fog of war" rolls in.

Takeoff to mission. "Wow, I guess we should have looked at the NOTAMS more closely...I've never flown that departure before... and what were the altitudes in the MOA again?"

Mission to RTB. Fortunately, our crew is very proficient here. They pick up some quality points by executing the mission very well. Unfortunately, this spike results from experience, not preparation.

RTB to approach. "Wow! Center sure was testy today. We didn't really try to exit from the FLIP point, but they knew we were in there. The ILS is down? I didn't know that."

Approach to debrief. "Quiet hours for the next 10 minutes? I guess we'll go to the penalty box until we can shoot the approach."

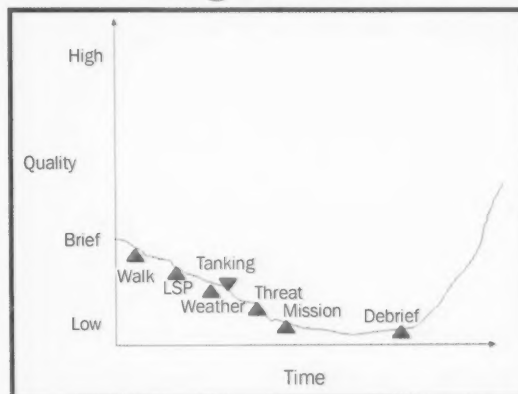
Debrief. On a hop such as this, the steepest positive slope occurs during the debrief. The mission never had a chance, but, all hands can learn from their mistakes and should prepare more thoroughly for the next mission.

Going "Downtown" With a Large Strike Package

While a unit-level-training sortie might survive a poor brief, any formula that includes a poor brief can be deadly in combat. At the very least, the briefer's professional reputation will be marred, and aircrew will return to the debrief shaking their heads, saying, "I'll never do that again."

The graphic that follows depicts a poorly briefed, complex-strike mission:

Going Downtown



Brief to walk. Again, we see the "fog of war" settling in, with one exception: This time, it is not merely a euphemism. These crews are walking to war.

Walk to LSP. "What LSP?" shouted the handler 30 minutes before launch. The same scenario was being played out at an expeditionary airfield

hundreds of miles away. Planning applies to the brief, as well as all facets of the mission. External agencies are especially crucial. Not everyone has a seat in CVIC.

LSP to weather. As the lead penetrated deck after deck of clouds following the launch, he thought, "Maybe I shouldn't have cut off the weather guesser, but I was running late in my brief..."

Weather to tanking. Tanking? What could possibly go wrong with tanking? "It figures," the strike lead thought, "today, of all days, two KC-135s decide to break. I did kind of blow through the slide. I hope the crews were paying attention—not that it would have mattered much. I didn't have a lot of time to spend on the plan last night..."

Tanking to threat. "AWACS, whaddya mean those guys are 70 miles from their orbit point? Didn't your crew get the change I sent off of the carrier on SIPRNET?"

Threat to mission. "A pop up, say what?" The strike lead then remembered he'd failed to

press for the MOB refresh before the brief. If only all of those kneeboard cards had come out of the print shop sooner.

Mission to debrief. Everyone came home this time, but the target will have to be restruck. The strike lead was lucky the next milestone on this graphic was not CSAR.

Debrief. After a lengthy debrief with CAG and his CO that night, the strike lead reflected on the entire mission. His CO kept going back to the quality of the brief. The air wing shouldn't have to launch again for the same targets—it will now.

Whether in combat afar or in training at home, every successful mission begins with a solid, professional brief. Your mission never will be better than you brief. On those rough days, your mission quality can get quite a spike from an honest, quality debrief. Keep it solid on both ends of the graph. That is the mark of a professional.

Cdr. Papadakis is the commanding officer of VAQ-133.

Mishap-Free Milestones

VO-4	30 years (300,000 hours)
VFA-113	27 years 8 months (120,000 hours)
VAQ-128	5 years (7,590 hours)
VRC-40	19 Years (85,000 hours)
VAW-126	10 years (16,000 hours)
VAQ-137	6 years (10,000 hours)
VAQ-140	17 years (28,000 hours)
VAQ-209	25 years (26,530 hours)
VO-2	5 years (24,500 hours)
HS-4	7 years (20,000 hours)
VFA-34	4 years (11,793 hours)
VAW-125	34 years (66,765 hours)
HS-11	11 years (35,735 hours)
VAW-123	34 years (68,000 hours)
HS-2	17 years (54,000 hours)
VP-94	31 years 10 months (100,000 hours)

Classic BROWNSHOES IN ACTION COMIX

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Contributed by Lt. Ward Carroll, VT-86



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Here's an excerpt . . .

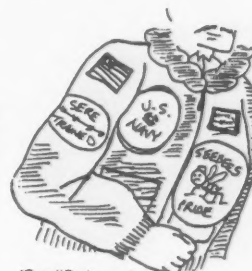
Brunswick NAS, ME KNHZ 43°53.6
Service — 30 min. req. for lobster deliv.
Remarks — Get your lobsters and leave before your friends see you. Discrete DD-175s available on request.

Don't be the guy who says, "I should've gone somewhere else!"



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(Set #3 shown)

Set #2
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Marine Corps J.R.O.T.C.
C-141 Starlifter
I'd Rather be Surfing

"Hey, Bill! Long time no see! I didn't know you were a Blue . . . Angle?"

"Well, I'm rushing them, and I figured I'd fit in better with my "Real McCoy"™ flight suit from **BROWNSHOES IN ACTION**. I think they were impressed, and I've been signing autographs all day!"

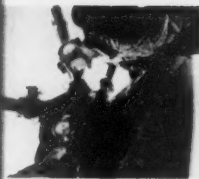




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